

In the Claims:

Please amend the claims as follows:

1-23 (cancelled)

24. (new) A circuit board, comprising:

at least one substrate layer; and

at least one optical channel;

wherein at least one substrate layer of the circuit board is made of plastic, and a mold has been used for shaping the substrate layer, wherein the substrate layer has been provided with a shape substantially corresponding to the shape of the optical channel, and wherein an optical channel has been formed in said shape formed in the substrate layer.

25. (new) The circuit board according to claim 24, wherein the substrate layer made of plastic is provided with at least one optical channel made of a material which has been set in a state where it conducts optical signals, and the thermal expansion coefficient of the material substantially corresponds to the thermal expansion coefficient of the thermoplastic used in the manufacture of the substrate layer.

26. (new) The circuit board according to claim 24, wherein the plastic used in the substrate layer is thermoplastic.

27. (new) The circuit board according to claim 24, wherein at least one of the following has been made by injection molding:

at least one substrate layer of the circuit board; or

at least one optical channel formed in connection with the at least one substrate layer.

28. (new) The circuit board according to claim 24, wherein the shaping of at least one substrate layer of the circuit board has been performed by hot pressing.

29. (new) The circuit board according to the claim 24, wherein the optical channel formed in at least one substrate layer of the circuit board comprises at least one reversing structure for changing the direction of optical signals.

30. (new) The circuit board according to claim 29, wherein the optical channel comprises two end points, and wherein the optical channel is configured to transmit optical signals between said end points.

31. (new) The circuit board according to claim 30, wherein said reversing structure is provided in connection with both end points.

32. (new) The circuit board according to claim 29, wherein said optical channel is substantially elliptical in one direction of the circuit board, wherein said reversing structures for changing the direction of optical signals are provided in connection with the focii of the elliptical form.

33. (new) The circuit board according to the claim 29, wherein said reversing structures comprises a bevelling, by which the direction of optical signals is arranged to be changed.

34. (new) The circuit board according to the claim 29, wherein the shapes of said reversing structures are a quadratic curve or a curve of a higher power.

35. (new) The circuit board according to the claim 29, wherein said reversing structures have substantially the shape of a circular cone.

36. (new) The circuit board according to the claim 24, wherein the optical channel comprises at least one core layer and at least one cladding.

37. (new) A method for manufacturing a circuit board, comprising:
forming at least one substrate layer and at least one optical channel to the circuit board;
making at least one substrate layer of the circuit board of plastic;
using a mold for shaping the substrate layer, by which mould the substrate layer is provided with a shape substantially corresponding to the shape of the optical channel; and
forming the optical channel in said shape formed in the substrate layer.

38. (new) The method according to claim 37, further comprising:
making the substrate layer of thermoplastic;
providing the substrate layer with at least one optical channel; and

using in the manufacture of the substrate layer a material which can be set in a state to conduct optical signals.

39. (new) The circuit board according to claim 37, further comprising:

using a thermoplastic in the forming of the substrate layer.

40. (new) The method according to claim 37, further comprising:

making at least one of the following by injection molding: at least one substrate layer of the circuit board or at least one optical channel formed in connection with the at least one substrate layer.

41. (new) The method according to claim 37, further comprising:

using hot pressing in the forming of at least one of the following: at least one substrate layer of the circuit board or at least one optical channel formed in connection with the at least one substrate layer.

42. (new) A method for manufacturing a layer of a circuit board in a continuous process, comprising:

forming is provided with at least one substrate layer and at least one optical channel to the circuit board;

making at least one substrate layer of the circuit board of plastic; and

using a mold for shaping the substrate layer, by which mold the substrate layer is provided with a shape substantially corresponding to the shape of the optical channel.

43. (new) The method according to claim 42, further comprising:
using a reel-to-reel process as said continuous process.

44. (new) The method according to claim 42, further comprising:
forming the optical channel in the shape provided in the substrate layer.

45. (new) The method according to claim 42, further comprising:
using the shape provided in the substrate layer as said optical channel.

46. (new) The method according to the claim 42, further comprising:
forming said shape by hot pressing.

47. (new) A circuit board, comprising:
at least one substrate layer made of plastic; and
at least one optical channel comprising a shape substantially corresponding to the shape
of the optical channel, said shape having been formed by using a mold;
wherein said shape of the substrate layer comprises said optical channel.